How to Fix iPhone 4S Wi-Fi Grayed Out

Use this guide to permanently fix an "unclickable" grayed out Wi-Fi button in the iPhone 4s.

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INTRODUCTION

A common problem in the iPhone 4S, sometimes the Wi-Fi button will be grayed out and unclickable. This problem seems to be related to thermal shock — the problem may be temporarily fixed by simply putting the phone in the refrigerator for 15 minutes, or under a lamp for 30 minutes.

If this is the case, then the necessary permanent solution is to reflow the *Murata SW SS1830010* Wi-Fi chip on the logic board.

TOOLS:

- P2 Pentalobe Screwdriver iPhone (1)
- Phillips #000 Screwdriver (1)
- iFixit Opening Tools (1)
- SIM Card Eject Tool (1)
- 2.5 mm Flathead Screwdriver (1)
- Spudger (1)
- Hot Air Rework Soldering Station (1)
- Small Vise (1)

Step 1 — Rear Panel

Before you begin, discharge your iPhone battery below 25%. A charged lithium-ion battery can catch fire and/or explode if accidentally punctured.

- Power off your iPhone before beginning disassembly.
- Remove the two 3.6 mm Pentalobe P2 screws next to the dock connector.

  Be sure the driver is well seated when removing Pentalobe screws, they are very easy to strip.

During reassembly, we recommend you replace the 5-point screws with equivalent Phillips screws. Our Liberation Kit provides the tools and screws needed to replace the Pentalobe screws with Phillips screws.

Step 2

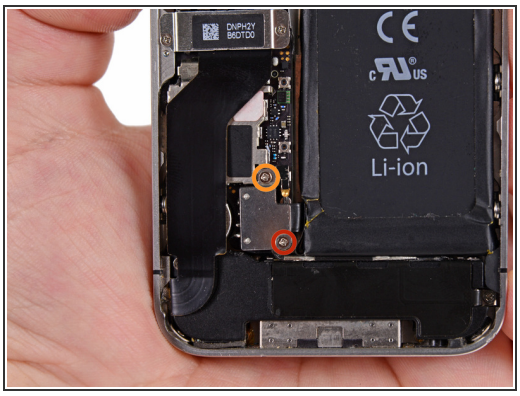
- Push the rear panel toward the top edge of the iPhone.

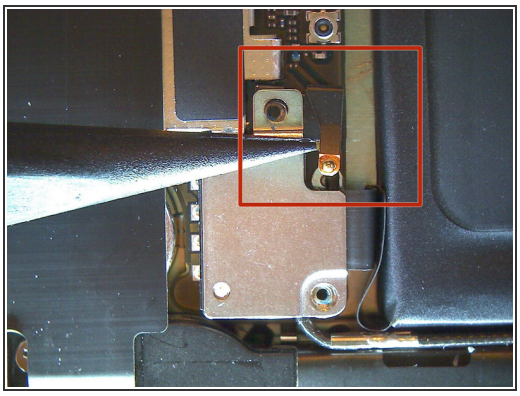
ⓘ The panel will move about 2 mm.

Step 3

- Pull the rear panel away from the back of the iPhone, being careful not to damage the plastic clips attached to the rear panel.
- Remove the rear panel from the iPhone.

Step 4 — Battery





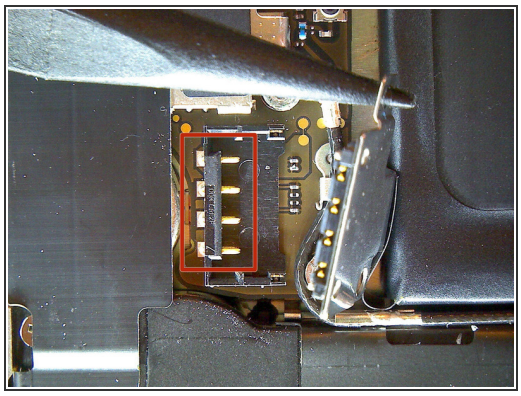
- Remove the following screws securing the battery connector to the logic board:
  - One 1.7 mm Phillips screw
  - One 1.5 mm Phillips screw.
- Use a plastic opening tool to gently detach the battery connector from the socket on the device. Start lifting off the connector from the bottom side, by placing the tip of the tool between the loudspeaker enclosure and the metal cover of the connector.

The battery connector comes off vertically from the logic board. Do not apply force sideways.

Pay attention to the pressure contact underneath the top screw of the battery connector. This may come loose while prying the battery connector from its socket.

Step 5





- Use a plastic opening tool to pull the pressure contact from underneath the battery connector.

⚠ When reinstalling the pressure contact, be sure to clean it with a degreaser such as windex or isopropyl alcohol. The oils on your fingers have the potential to create wireless interference.

⚠ Take notice of the position of the small black ground clip on the upper screw of the battery connector. This clip is attached only by the upper screw. When reinstalling, it must be aligned so the gold contact point will press against the back cover.

- Be careful not to rip off the battery connector socket soldered on the logic board. There are 4 very small soldering points awaiting this mistake!

Step 6

- Insert the edge of a plastic opening tool between the battery and the outer case near the bottom of the iPhone.
- Run the plastic opening tool along the right edge of the battery and pry up at several points to completely separate it from the adhesive securing it to the outer case.

Step 7

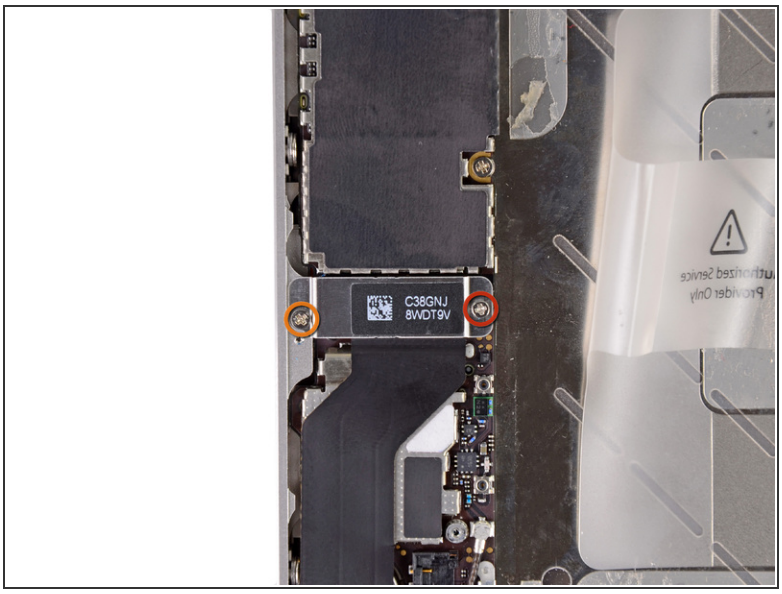
- Use the exposed clear plastic pull tab to peel the battery off the adhesive securing it to the iPhone.

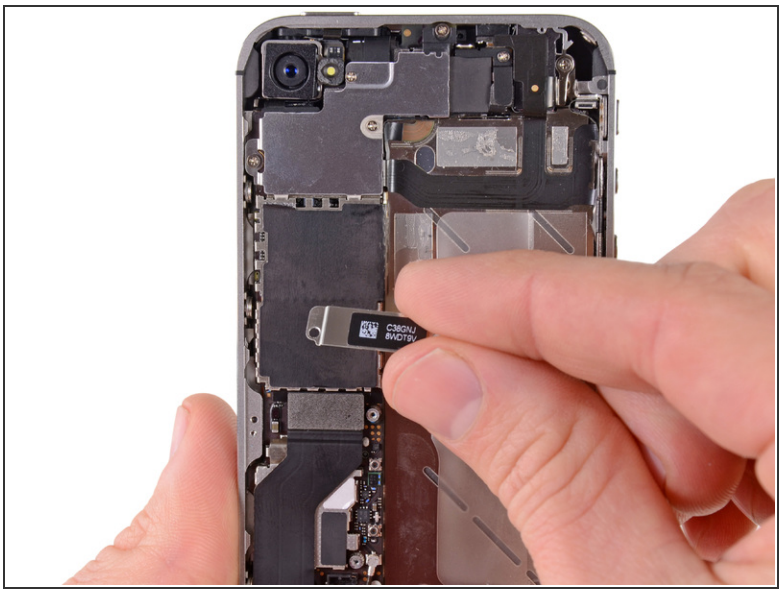
⚠ Be careful not to pull the plastic pull tab too hard as it can be ripped off very easily.

- Remove the battery.

Perform a hard reset after reassembly. This can prevent several issues and simplify troubleshooting.

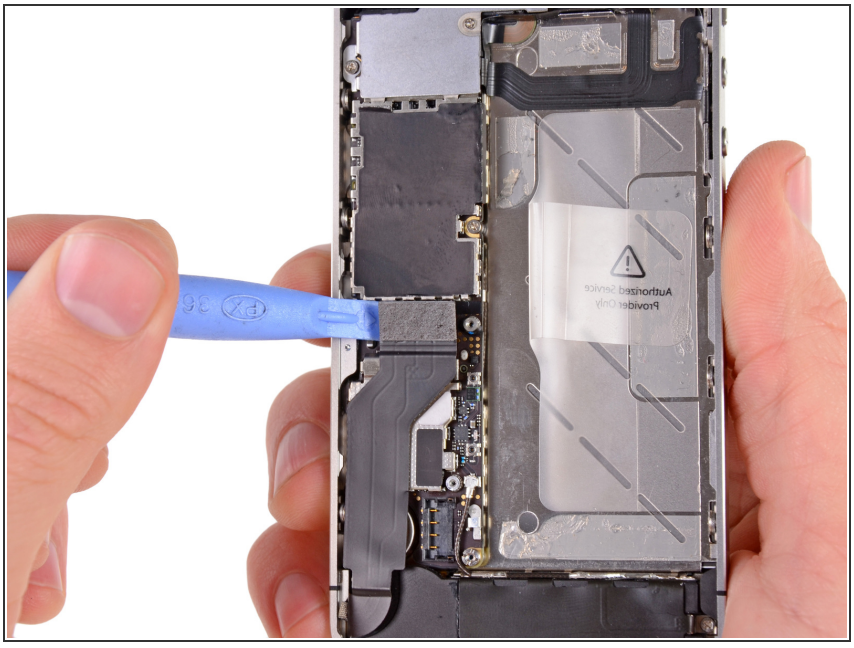
Step 8 — Dock Connector Cable





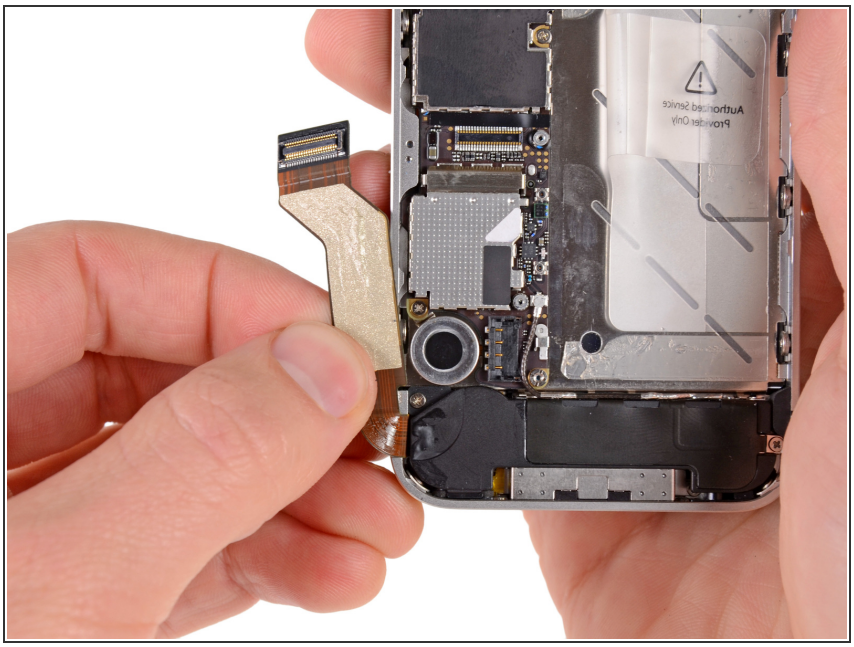
- Remove the following screws securing the dock connector cable cover to the logic board:
  - One 1.5 mm Phillips screw
  - One 1.2 mm Phillips screw
- Remove the metal dock connector cable cover.

Step 9



- Use the edge of a plastic opening tool to pry the dock cable up from its socket on the logic board.

Step 10

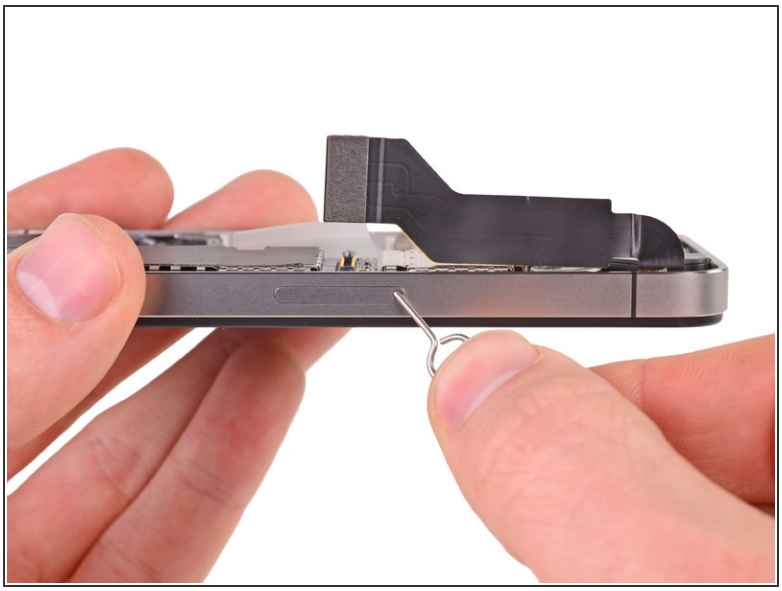


- Peel the dock connector cable off the adhesive securing it to the logic board and the side of the speaker enclosure.

Step 11

- Use the edge of a plastic opening tool to pry the cellular antenna cable up from its socket on the logic board.
- De-route the cellular antenna cable out from under the metal fingers attached to the logic board.

Step 12 — SIM Card

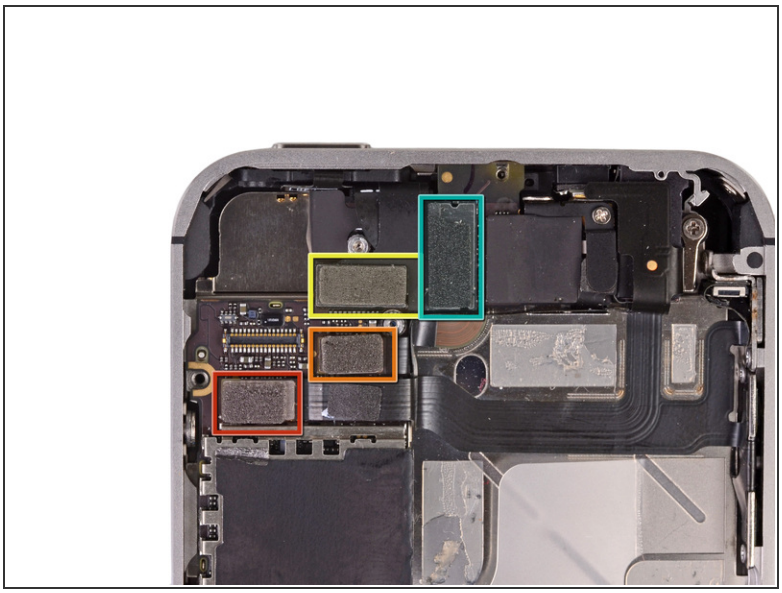


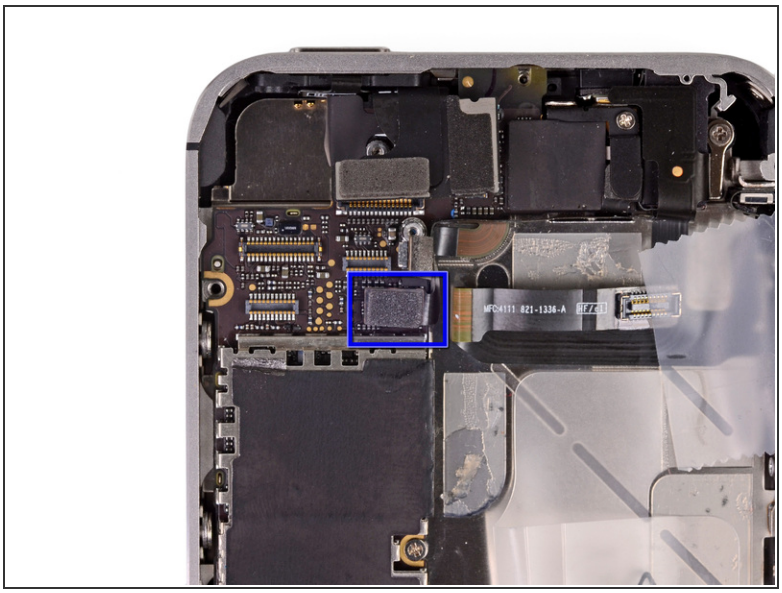
- Use a SIM card eject tool or a paperclip to eject the SIM card and its holder.

⚠ This may require a significant amount of force.

- Remove the SIM card and its holder.

Step 13 — Logic Board



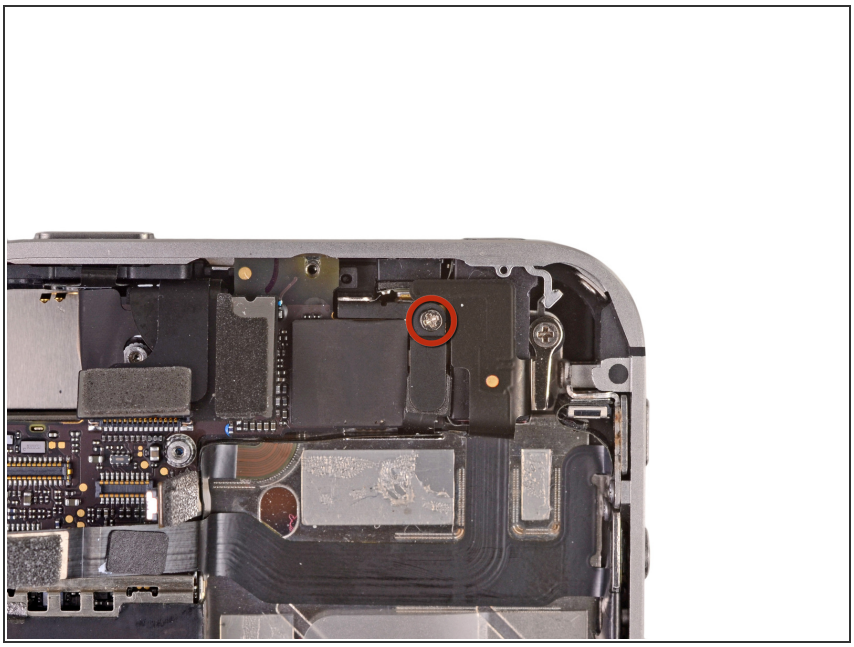


- Remove the five cables near the top of the logic board in the following order:
  - Headphone jack/volume button cable
  - Front facing camera cable
  - Digitizer cable
  - Display data cable
  - Power button cable (located underneath the headphone jack/volume button cable as shown in the second picture.)

To disconnect the cables, use the edge of a plastic opening tool to gently lift their connectors up and out of the sockets on the logic board.

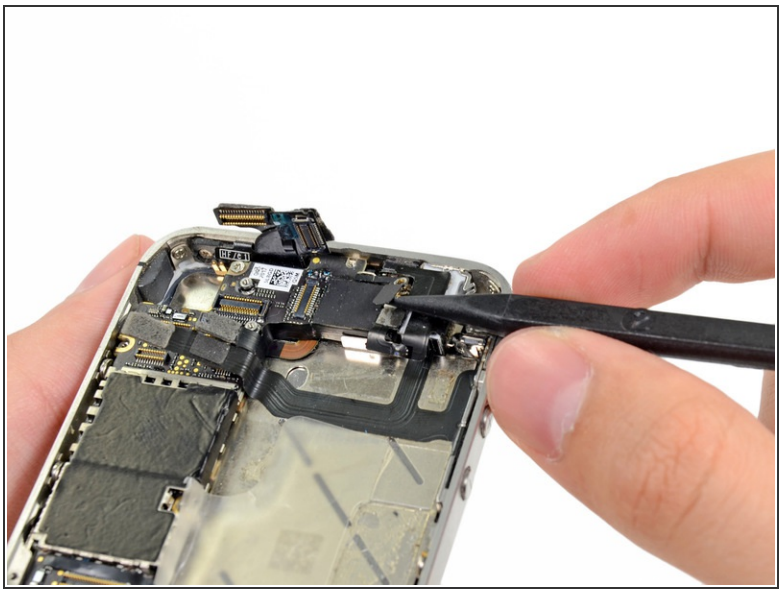
Be careful not to break any of the small and delicate surface mount components as you disconnect the cables.

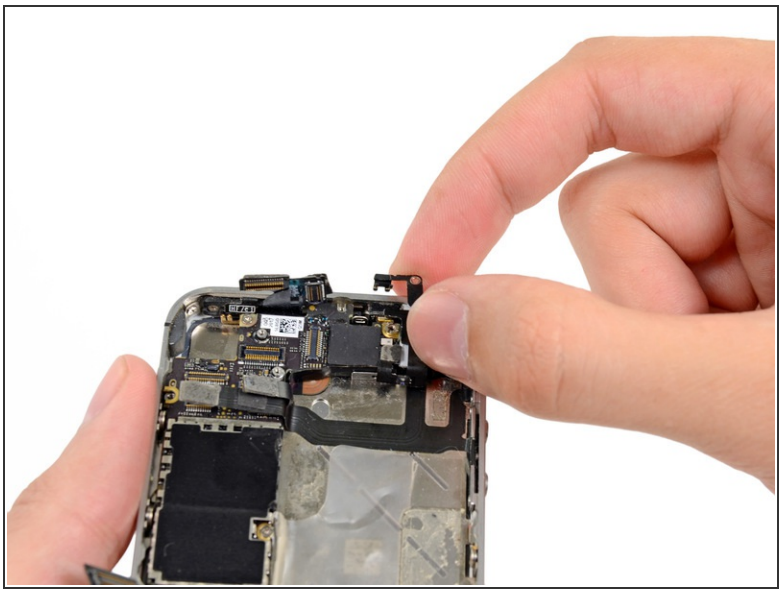
Step 14



- Remove the 1.5 mm Phillips screw securing the grounding clip to the logic board near the headphone jack.

Step 15

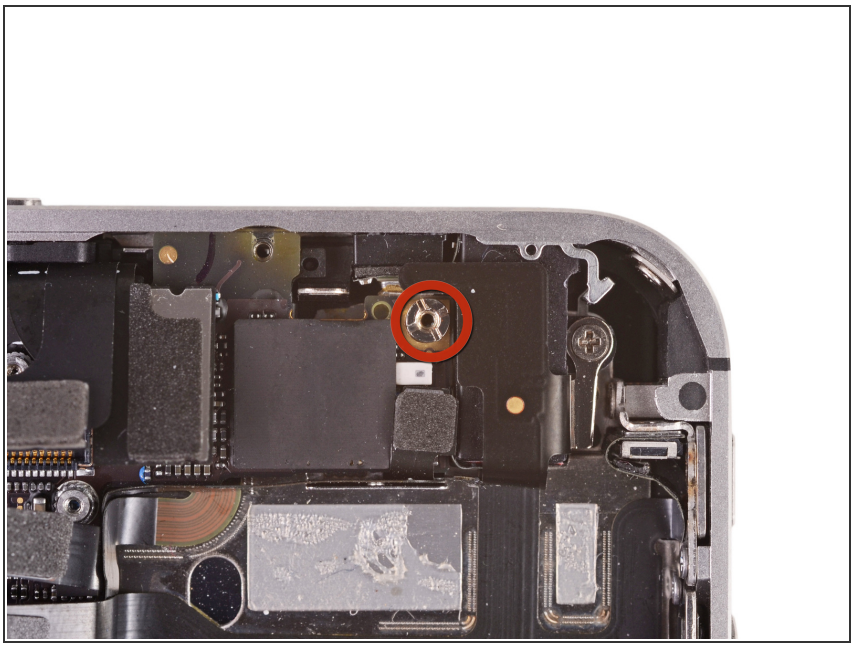




- Use the tip of a spudger to pry the small grounding clip up off the logic board.
- Carefully grasp the grounding clip and remove it from the iPhone.

⚠ Before reassembly, be sure to clean all metal-to-metal contact points on the grounding clip (**not** the mating halves of connectors) with a de-greaser such as windex or isopropyl alcohol. The oils on your fingers have the potential to cause grounding issues.

Step 16

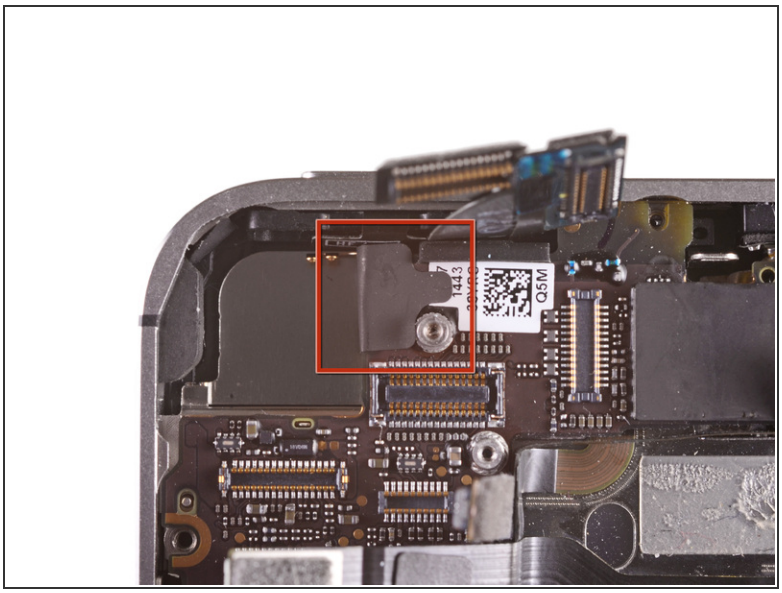


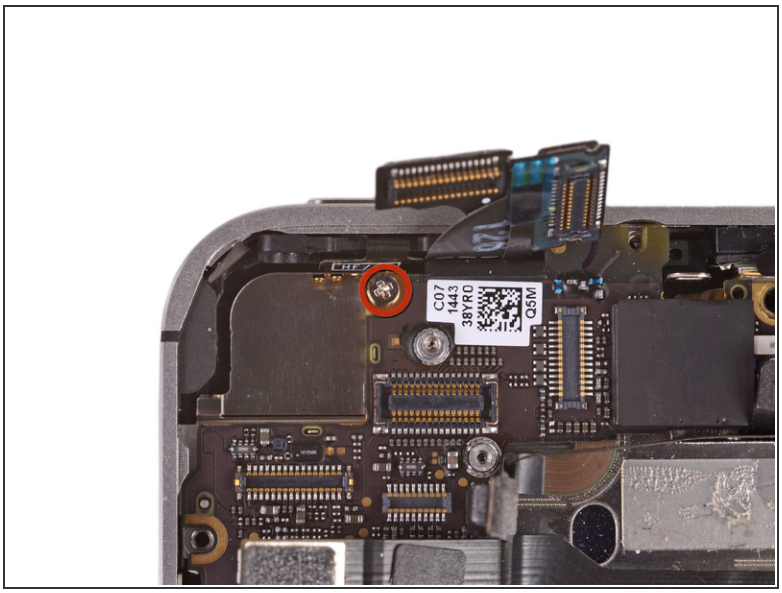
- Use a standoff bit or a small flathead screwdriver to remove the 4.8 mm standoff near the headphone jack.

Step 17

- Use the edge of a plastic opening tool to disconnect the Wi-Fi antenna from the logic board.

Step 18



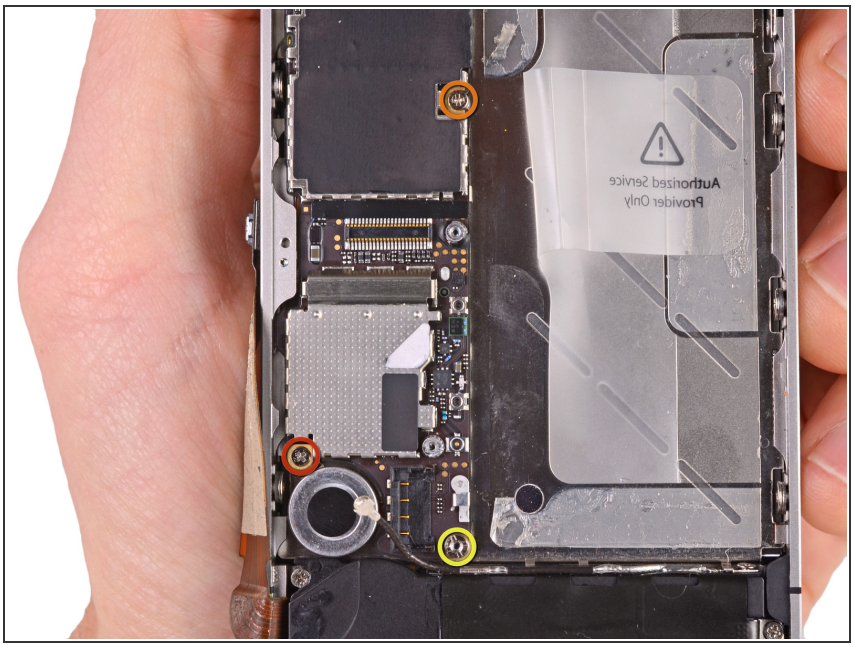


- If present, peel the piece of black tape covering the hidden screw near the power button.
- Remove the 2.6 mm Phillips screw securing the logic board near the power button.

  (Use caution when removing this screw and removing the power contact held by it; the contact tab will come loose with the screw)

Notice the small rubber bumper under the screen & digitizer cables (which are detached at top above the Q-code). This bumper can fall off of the logic board when removed or get stuck to the cables and fall off later.

Step 19



- Remove the following screws securing the logic board to the case:
  - One 2.5 mm Phillips screw near the vibrator motor
  - One 2.4 mm Phillips screw
  - One 3.6 mm standoff along the side of the logic board nearest the battery opening.

Use a standoff driver bit or a small flathead screwdriver to remove the single 3.6 mm standoff screw.

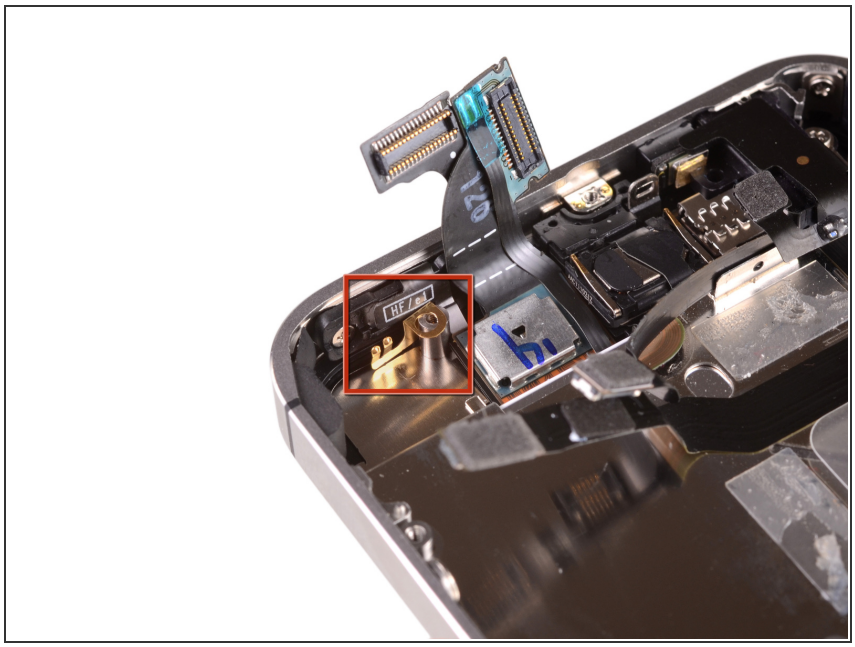
Step 20

- Carefully lift the logic board from the end closest to the speaker enclosure and slide it away from the top edge of the iPhone.
- Remove the logic board.

Before reassembly, be sure to clean all metal-to-metal contact points on the logic board (**not** the mating halves of connectors) with a de-greaser such as windex or isopropyl alcohol. The oils on your fingers have the potential to cause grounding issues.

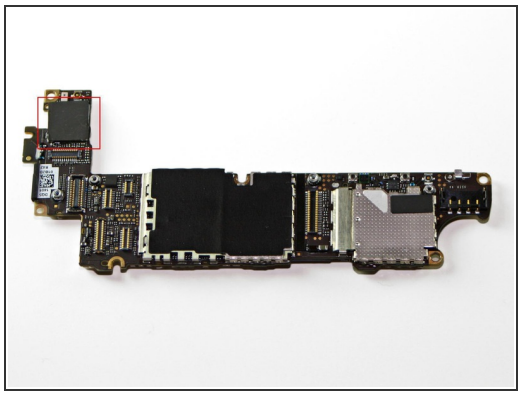
There is a small rubber bumper that sits on the top edge of the logic board where the digitizer and screen cables come through the case. It protects the cables as they bend over the top of the logic board. This can either get stuck to the cables or fall off the logic board when it comes out. Look back over step 22 for more details.

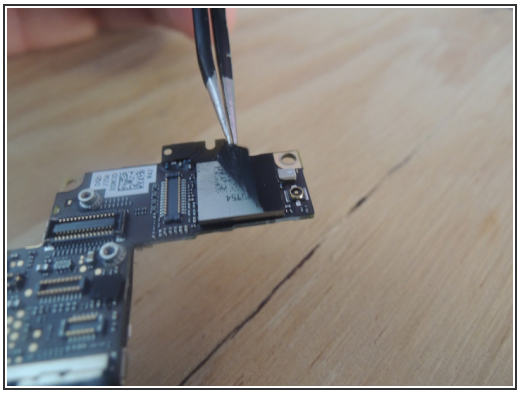
Step 21

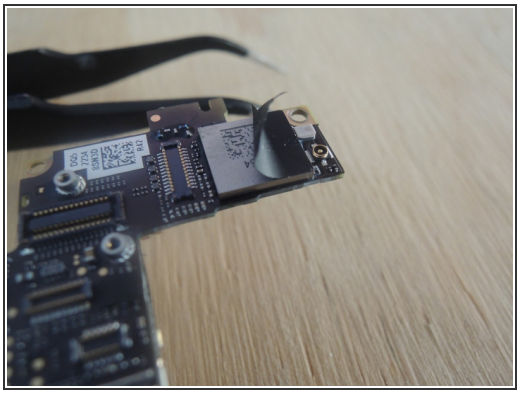


⚠ Be sure not to lose the small grounding finger for the rear facing camera near the power button. This finger rests on top of the PCB, screwed down, and covered with the adhesive black plastic tape.

Step 22 — How to Fix iPhone 4S Wi-Fi Grayed Out

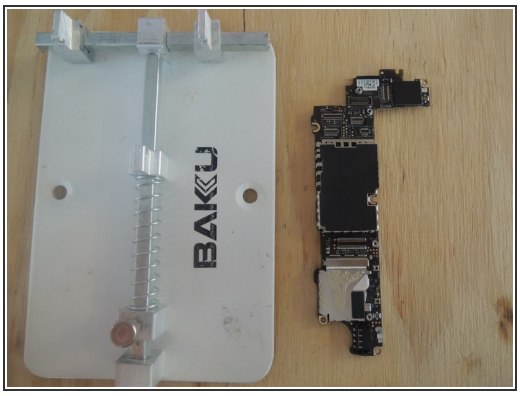


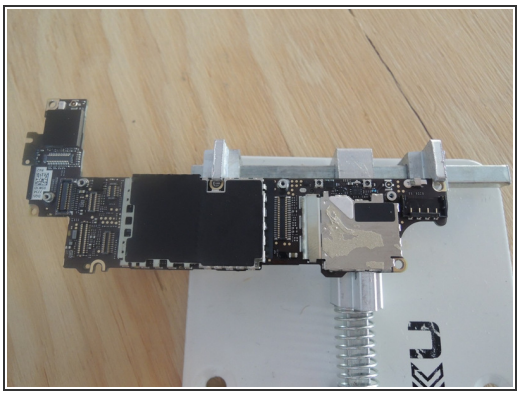
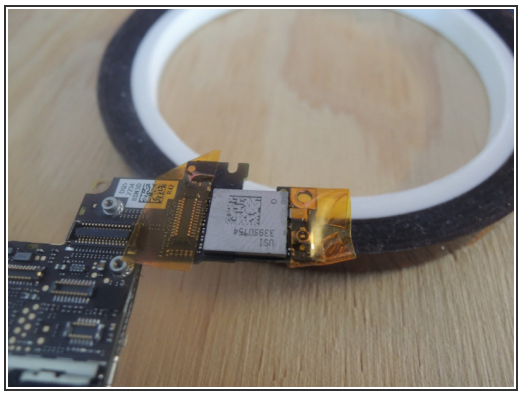




- Remove the adhesive protection on the Wi-Fi/bluetooth chip.
- Now we can see the Murata SS1830010 chip.

Step 23



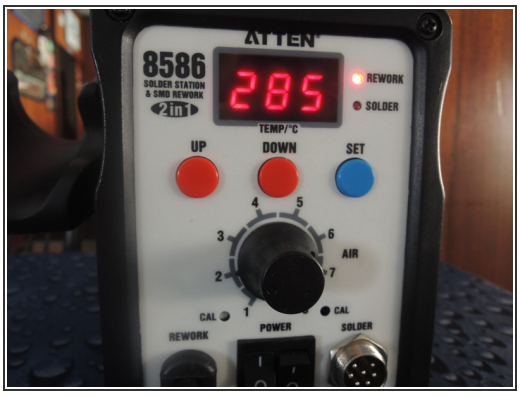
- Put the logic board in a PCB holder or small vise, to safely hold it while reflowing (it's going to get hot!).
- Protect the logic board with *Kapton tape* that has good insulating and temperature characteristics (temperature range: –269 to +400 °C).

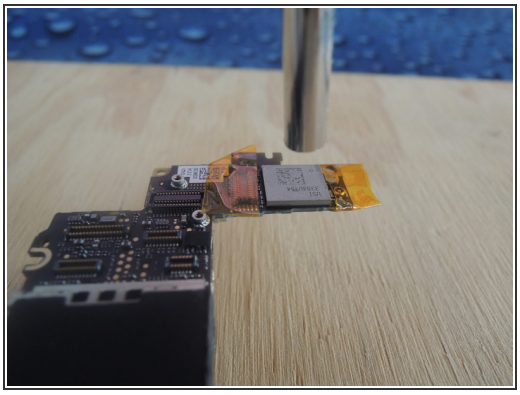
Step 24

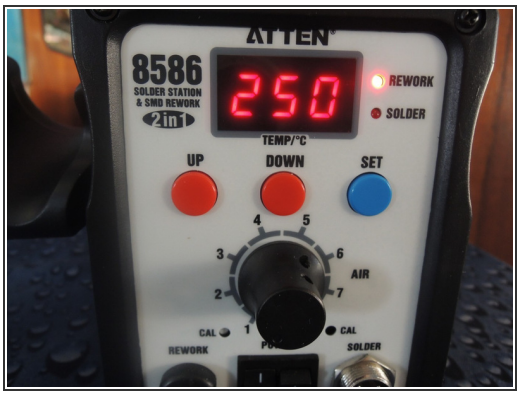
- Now we need a hot air rework station with a small nozzle:

  ⓘ The nozzle's size must be 1/2 or 1/4 of the chip size.

Step 25





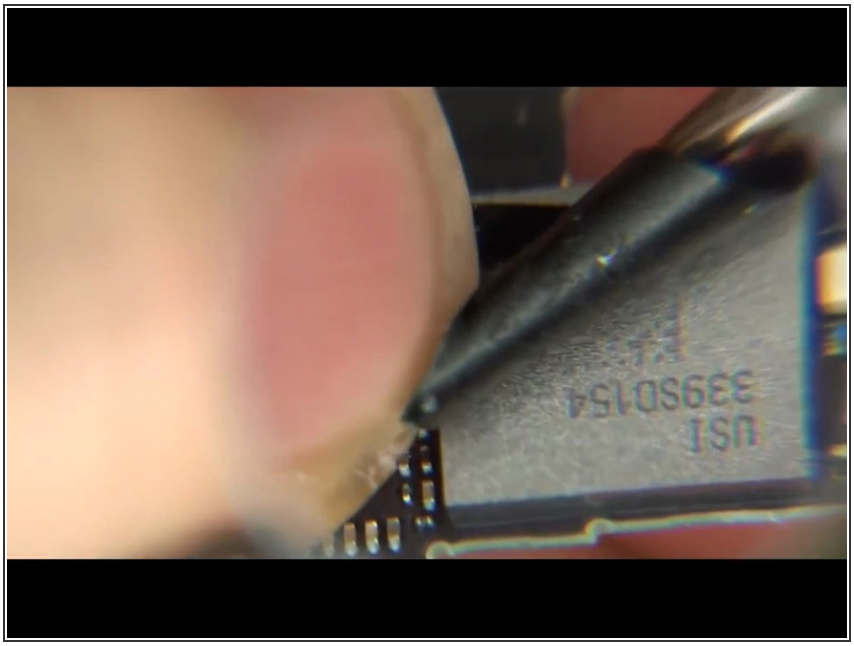


- *Edit*: the correct temperature is almost 180-200 °C because around the chip there is a little black protection that can go under the chip.
- Set a low air flow: 1 or 2 (on a 1 to 7 scale).
- Now, doing circular movement, you have to reflow for 4-5 minutes.

⚠ Be careful to reflow only the Wi-Fi chip and not any of the surrounding ICs or circuits.

- After 5 minutes, gradually decrease the temperature from 200 to 0 °C.

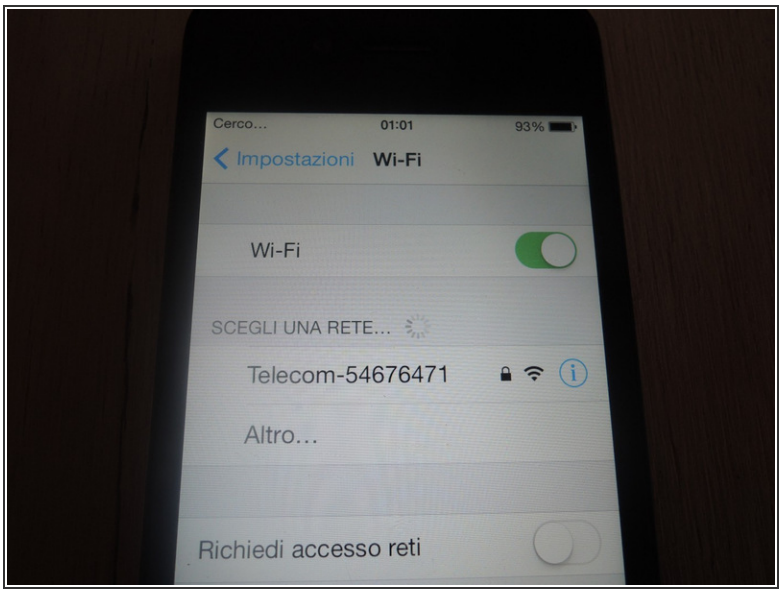
Step 26



- After reflowing, wait ten minutes to allow the logic board to cool before handling it.

Remember to put on the protective sticker back on the Wi-Fi chip before reassembling the phone.

Step 27



- Here is the final result.

Step 28

- These are the pictures before and after the reflow:
  - In the first image, the Wi-Fi color is light grey (not working).
  - In the second image, the Wi-Fi color is dark grey (working).

To reassemble your device, follow these instructions in reverse order.

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